



DEPARTMENT OF DEFENSE

Department of the Air Force

Notice of Intent to Grant a Partially Exclusive Patent License

AGENCY: Department of the Air Force, Department of Defense.

ACTION: Notice of Intent.

SUMMARY: Pursuant to the Bayh-Dole Act and implementing regulations, the Department of the Air Force hereby gives notice of its intent to grant a partially exclusive patent license to UES Inc., a small business, having a place of business at 4401 Dayton-Xenia Road, Dayton, OH 45432-1894. Such license is partially exclusive as it is limited to the field of electronics.

DATES: Written objections must be filed no later than fifteen (15) calendar days after the date of publication of this Notice.

ADDRESSES: Submit written objections to James F. McBride, Air Force Materiel Command Law Office, AFMCLO/JAZ, 2240 B Street, Area B, Building 11, Wright-Patterson AFB, OH 45433-7109; Facsimile: (937) 255-9318; or E-mail: afmclo.jaz.tech@us.af.mil. Include Docket ARX-210727A-PL in the subject line of the message.

FOR FURTHER INFORMATION CONTACT: James F. McBride, Air Force Materiel Command Law Office, AFMCLO/JAZ, 2240 B Street, Area B, Building 11, Wright-Patterson AFB, OH 45433-7109; Telephone: (937) 713-0229; Facsimile: (937) 255-9318; or E-mail: afmclo.jaz.tech@us.af.mil.

SUPPLEMENTARY INFORMATION: The Department of the Air Force may grant the prospective license unless a timely objection is received that sufficiently shows the grant of the license would be inconsistent with the Bayh-Dole Act or implementing regulations. A competing application for a patent license agreement, completed in compliance with 35 U.S.C. § 209; 37 C.F.R. 404. and received by the Air Force within the period for timely objections, will be treated as an objection and may be considered as an alternative to the proposed license.

Abstract of patents and patent application(s):

I. Articles comprising a resistor comprising core shell liquid metal encapsulates and methods of detecting an impact on an article using a resistor comprising core shell liquid metal encapsulates are disclosed. Such core shell liquid metal encapsulates enable simple but robust impact sensors as such encapsulates comprise a highly electrically resistant metal oxide shell that prevents such encapsulates from coalescing. Yet when such shell is ruptured, the highly conductive bulk liquid metal is released. Such liquid metal changes electrical properties of a sensor comprising core shell liquid metal encapsulates which in turn is evidence of the aforementioned impact.

Intellectual property:

- U.S. Patent No. 10,900,848 B2, that issued on January 26, 2021, and entitled “*Articles comprising a resistor comprising core shell liquid metal encapsulates and method of detecting an impact.*”.

II. The present invention relates to core shell liquid metal encapsulates comprising multi-functional ligands, networks comprising such encapsulates and processes of making and using such encapsulates and networks. When subjected to strain, such network’s conductivity is enhanced, thus allowing the network to serve as a healing agent that restores at least a portion of the conductivity in an adjacent conductor.

Intellectual property:

- U.S. Patent No. 11,100,223 B2, that issued on August 24, 2021, and U.S. Patent Application Serial No. 17/376,644, that was filed on July 15, 2021. Such patent and patent application being entitled “*Core shell liquid metal encapsulates comprising multi-functional ligands and networks comprising same*”

III. The present invention relates to articles comprising core shell liquid metal encapsulate networks and methods of using core shell liquid metal encapsulate networks to control AC signals and power. Such method permits the skilled artisan to control the radiation, transmission, reflection and modulation of an AC signal and power. As a result, AC system properties such as

operation frequency, polarization, gain, directionality, insertion loss, return loss, and impedance can be controlled under strain.

Intellectual property:

- U.S. Patent Application Serial No. 16/580,652, that was filed on September 24, 2019, and entitled “*Articles comprising core shell liquid metal encapsulate networks and method to control alternating current signals and power*”.

IV. The present invention relates to substrates comprising a network comprising core shell liquid metal encapsulates comprising multi-functional ligands and processes of making and using such substrates. The core shell liquid metal particles are linked via ligands to form such network. Such networks volumetric conductivity increases under strain which maintains a substrate’s resistance under strain. The constant resistance results in consistent thermal heating via resistive heating. Thus allowing a substrate that comprises such network to serve as an effective heat provider.

Intellectual property:

- U.S. Patent No. 11,102,883 B2, that issued on August 24, 2021, and U.S. Patent Application Serial No. 17/386,807, that was filed on July 28, 2021. Such patent and patent application being entitled “*Substrates comprising a network comprising core shell liquid metal encapsulates comprising multi-functional ligands*”

V. The present invention relates to architected liquid metal networks and processes of making and using same. The predetermined template design technology of such architected liquid metal networks provides the desired spatial control of electrical, electromagnetic, and thermal properties as a function of strain. Thus, resulting in improved overall performance including process ability.

Intellectual property:

- U.S. Patent Application Serial No. 16/671,750, that was filed on November 1, 2019, and entitled “*Architected liquid metal networks and processes of making and using same*”.

Tommy W. Lee,

Air Force Federal Register Liaison Officer.

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